

# Zoning Board of Appeals Application for Variance

# Warren Farms Landfill Solar Project

### Submitted to:

Town of Dalton Zoning Board of Appeals 462 Main Street Dalton, MA 01226



### **Prepared For:**

Warren Farms Solar LLC Citizens Energy Corporation 88 Black Falcon Avenue, Suite 342 Boston, Massachusetts 02210



### Prepared By:

TRC
Wannalancit Mills
650 Suffolk Street
Lowell, Massachusetts 01854



March 2023



March 9, 2023

Town of Dalton Zoning Board of Appeals 462 Main Street Dalton, MA 01226

Re: Zoning Board of Appeals Application

Warren Farms Solar, LLC

**Proposed Large Scale Solar Facility Bridle Road, Dalton, Massachusetts** 

**Dalton, Massachusetts** 

#### Dear Planning Board:

On behalf of Warren Farms Solar, LLC (Applicant), TRC Companies (TRC) is pleased to present this Application to the Town of Dalton Zoning Board of Appeals (ZBA) for a variance related to the proposed development of a 2.66-Megawatt (MW) alternating current (AC) ground-mounted solar photovoltaic (PV) system and 2.1 MW battery energy storage system installation project (the Project). The proposed Project is located on the closed and capped private landfill, known as Warren Farms Landfill, at Bridle Road in Dalton, Massachusetts (Site). This Project is currently under Site Plan Review and Special Permit Application by the Town of Dalton Planning Board under the Large Scale Solar Photovoltaic Installations bylaw (§ 350-37.1). During Planning Board review, it was discovered that the proposed 7-foot chain link fence for the Project would require a Variance from the ZBA. Enclosed under this cover is the ZBA Application form and Site Plan set (5 copies) including the required Project information. We are also including the permit application fee.

We understand that the Town of Dalton will perform the required abutter notification and legal notice of the public hearing in the local newspaper. If possible, we would request being heard on the April 4<sup>th</sup>, 2023 ZBA meeting agenda.

Please contact Max Lamson at 978.770.1060 or mlamson@trccompanies.com if you have any questions or comments.

**TRC** 

Max Lamson

Senior Director, Renewable Energy



### TOWN OF DALTON

Town Hall 462 Main Street

Dalton, Massachusetts 01226

Telephone (413) 684-6111, Ext. 304

Email: gmcgregor@dalton-ma.gov

### ZONING BOARD OF APPEALS APPLICATION

	14/ 5 0 1 110		
	PLICANT: Warren Farms Solar LLC FOR ADMINISTRATIVE USE O		
ADDRESS:	88 Black Falcon Avenue, Suite 342	DETITION 4	
	Boston, MA 02210	PETITION #:	
PHONE:	617-951-0418	DATE FILED WITH TOWN CLERK:	
EMAIL:	ebyrne@citizensenergy.com		
	WNER: GreySky LLC		
ADDRESS:	32 Colman Drive	HEARING DATE:	
9	Wolcott CT 06716	TIME	
PHONE:(	203) 879- 1684	TIME:	
EMAIL: _a	pothccrn@aol.com		
Section(s) of to Type of Appli SPECIAL PER Was project / Description o Large Sol	The Dalton Zoning By-law under which you are appearation: (Please Circle)  MIT VARIANCE ADMINISTRATions discussed with the Building Inspector?  If Project or Changes Proposed (please attach additional Photovoltaic Installation - See Attached Name against 7-foot chainlink fence to meet electrical contents.	ATIVE APPEAL  Y_YES (Date: 3/2/2023)NO  tional pages if needed):  rative and Site Plans	
clearly and legible to the email about addition, the application, noting the Town of Dales SIGNATURE:	Applicant shall pay a fee of three hundred and seventy five fying abutters and publication of legal notices of the Publication)  (Applicant)  (Owner)	quired on page 2, and one digital copy sent dollars (\$375.00) for processing the	
Application and	Fee received by:(Agent for the SPGA)		
Date:		OVER	

### **ZONING BOARD OF APPEALS - SITE PLAN REQUIREMENTS**

#### PLEASE NOTE:

The Zoning Board for issuance of special permits requires a site plan drawn to scale with clearly defined dimensions indicating the location, size and height of the proposed building(s), site improvements, and containing such other information as may be required by the Board.

### THE BOARD REQUIRES SITE PLANS TO SHOW THE FOLLOWING:

- ✓ Site plan drawings to scale (see above)
- ✓ Lot dimensions (may be obtained at the Assessor's Office)
- ✓ Street name(s) abutting the subject property
- ✓ Lot or building street number(s) (may be obtained at the Assessor's Office)
- ✓ Zoning District, in which subject property is located
- ✓ Abutting uses
- ✓ Existing and/or proposed buildings with dimensions
- ✓ Driveway(s) and Parking spaces
- ✓ Screening or landscaping required for parking (See Zoning By-law, 350-40: Off Street Parking)
- $\checkmark$  Exterior lighting, if any
- ✓ Signs, if any
- Other information you believe would be helpful or necessary

Site plan(s) meeting the above requirements shall be filed with the Town Clerk along with the Application to the Board so as to provide this information to other municipal Boards for review, who, by law, may make recommendations on your petition.

Site plan(s) prepared by a Massachusetts Registered Land Surveyor may be required.

Site plans are important and, diligently prepared, may eliminate a zoning issue at a later date, and/or facilitate the transfer or property.

The Board will provide limited guidance to assist you.



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### **ATTACHMENTS**

Attachment A: Permitting Drawing Set



### 1.0 Project Introduction

On behalf of Warren Farms Solar, LLC (Applicant), TRC Companies (TRC) is pleased to present this Application to the Town of Dalton Zoning Board of Appeals (ZBA) for a variance related to the proposed development of a 2.66-Megawatt (MW) alternating current (AC) ground-mounted solar photovoltaic (PV) system and 2.1 MW battery energy storage system installation project (the Project). The proposed Project is located on the closed and capped private landfill, known as Warren Farms Landfill, at Bridle Road in Dalton, Massachusetts (Site).

This Project is currently under Site Plan Review and Special Permit Application by the Town of Dalton Planning Board under the Large Scale Solar Photovoltaic Installations bylaw (§ 350-37.1). During Planning Board review, it was discovered that the proposed 7-foot chain link fence for the Project would require a Variance from the ZBA.

The proposed Project will be constructed primarily on the existing engineered non-permeable landfill cover system and proposes to use existing access and roads to the extent practical. The proposed chain-link perimeter fence is a standard requirement for commercial scale solar photovoltaic projects and is required under National Electric Code (NEC). The Permitting Drawing Set for the Project is included as Attachment A.

### 2.0 Existing Conditions

The Warren Farms Landfill is located on a parcel of land to the east of Bridle Road in Dalton, Berkshire County, Massachusetts (Project Site) which is currently owned by Greysky, LLC and has a total area of approximately 31 acres. This parcel is zoned as Residential and Agricultural, Low Density (R-1) Zoning based on the Town of Dalton Zoning Map. The parcel is identified by the Town of Dalton Tax Assessor's Map as Map 106, Lot 55. The dimensions of the landfill parcel are depicted on the Cover Sheet in the Permit Drawing Set provided as **Attachment A**.

The Warren Farms Landfill extends across the parcel's western boundary onto the Town of Dalton Transfer Station property. The Town's Transfer Station property to the west of the Project Site consists of the transfer station, the Town's closed landfill, existing access roads, parking, and stockpile areas. The Warren Farms Landfill does not have existing post-closure uses.

Surrounding land use is primarily residential to the south, undeveloped forested land to the west and north, and a solar development facility to the east. A large sand and gravel pit is located immediately southeast of the Warren Farms Landfill. The Project Site is located within the R-1-Residential / Agricultural District as shown in the Town of Dalton Zoning Map, dated November 13, 2012.



### 3.0 Project Description

### 3.1 Photovoltaic and Battery System Installation

The proposed 2.66-MW AC solar array will be constructed on the Warren Farms Landfill which is a closed and capped, privately-owned landfill. The solar array is designed to be protective of the existing landfill cover system with a "non-penetrating" foundation system. The array will consist of a fixed-tilt ground-mounted racking system supported by concrete-filled ballast tub supports placed above the topsoil level of the cover system. The landfill solar project will be developed under a Post-Closure Use Permit (PCUP) from the Massachusetts Department of Environmental Protection (MassDEP) Solid Waste Division.

The solar array layout is located on areas of the landfill that have moderate slopes (<15%). Leveling stone will be added beneath the ballasts as-needed in sloped areas to meet the tolerances of the proposed racking system. Module strings contained within the racks will be conducted by Direct Current (DC) wiring which are coupled at combiner boxes and eventually carried throughout the array via aboveground conduit in cable trays to the pair of equipment pads centrally located on the southern portion of the landfill. The wiring is connected to the battery facility and inverter unit followed by the transformer co-located on an adjacent equipment pad. Medium voltage AC cable will leave the equipment pads and travel via aboveground conduit in cable trays within the fenced-in facility and transition to aboveground rigid metal conduit outside the fenced-in facility to the overhead electric lines outside the limits of waste to the point of interconnection located on the east side of Bridle Road. The cable, AC and DC, located within the limit of waste will be aboveground and placed on protective cable trays or in aboveground rigid metal conduit. The use of poles or conduit penetrating the landfill cover will not be used.

The solar array plan layout and details regarding associated components are shown in the permitting drawing set prepared by TRC, included as **Attachment A**, and are discussed in the following sections.

### 3.2 Electrical Equipment Specifications

The Project will include an inverter that will convert the DC electricity from the batteries to AC electricity to then be transmitted to the local distribution circuit. The inverter also provides ground fault protection and system statistics, including voltage and current on AC and DC circuits, energy production, and maximum power point tracking. The Project also includes an electric transformer that regulates AC voltage before the electricity leaves the site and enters the grid. The inverter and transformer are mounted on concrete foundations and will be within the secure fenced portion of the Project.

The DC-coupled battery storage containers will have a maximum energy capacity of 2.1 MW. The chemistry within the battery storage containers will be Lithium Iron Phosphate (LFP) cells, which is a common type of Lithium-Ion battery chemistry. The chemicals within the battery cells are typically contained in a sealed Aluminum-plastic film. Risk of exposure occurs only if the battery



is mechanically or electrically abused. The batteries are not classified as hazardous under the Classification, Labelling and Packaging (CLP) Regulation. Under conditions of normal use, respiratory protection is not required for working around the battery cells. When promptly used or disposed, the battery does not present an environmental hazard. Battery containers typically have an internal fire suppression system and automatic shutoff protections. The solar array, electrical equipment, and battery layout and details are shown in the permitting drawing set prepared by TRC, included as **Attachment A**.

#### 4.0 Fence Variance

According to the Town of Dalton Bylaws, Article VII, Supplementary District Regulations, § 350-26 Fences; fences or walls along the rear or side lot lines shall not exceed six feet in height and a 7-foot chain-link perimeter fence is not allowable as a permanent installation. Given the need for a 7-foot chain-link fence to meet security and electrical code requirements for the solar and battery project, the Project applicant is requesting a variance to the existing allowable fence standards within the R-1-Residential / Agricultural District.



**Attachment A: Permitting Plan Set** 

# WARREN FARMS SOLAR LLC

# PROPOSED 2.66 MW-AC SOLAR ARRAY & BESS PROJECT

# DALTON, BERKSHIRE COUNTY, MASSACHUSETTS

PREPARED FOR: WARREN FARMS SOLAR LLC

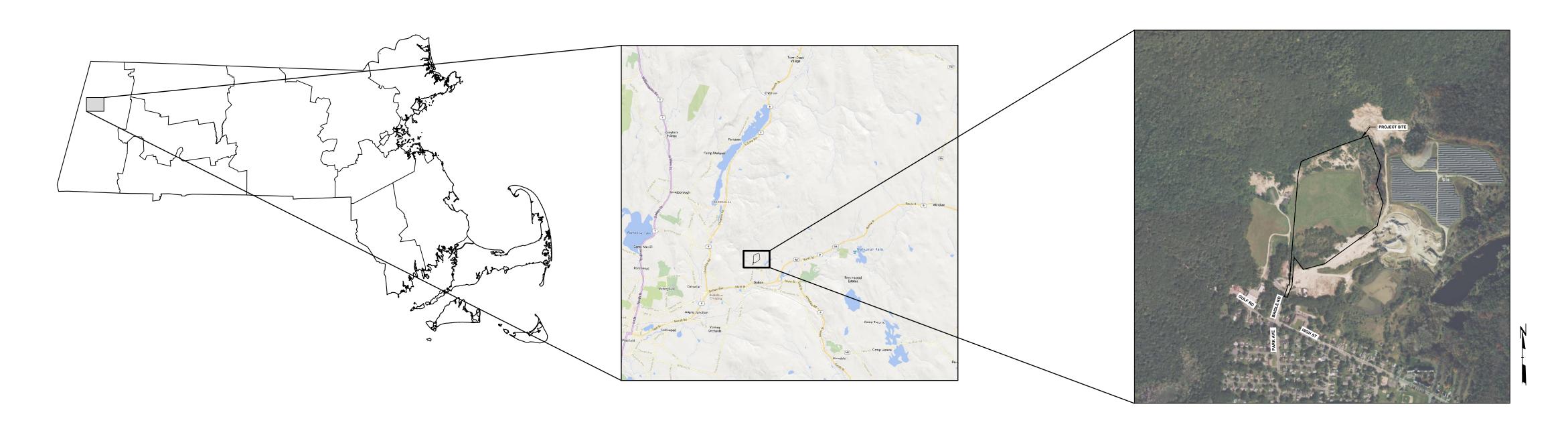
88 BLACK FALCON AVENUE, SUITE 342

**BOSTON, MASSACHUSETTS 02210** 

PREPARED BY: TRC

**LOWELL, MA 01854** 

DATE: JANUARY 2023



APPROVED: TOWN OF DALTON PLANNING BOARD			
SIGNATURE	DATE	APPROVED	

SHEET INDEX				
SHEET NUMBER	SHFFT TITLE			
G1.00	CIVIL COVER SHEET			
G1.01	GENERAL NOTES & LEGEND			
G1.02	EROSION CONTROL NOTES & DETAILS			
C1.00	EXISTING CONDITIONS PLAN			
C1.01	SITE PREPARATION PLAN - SOUTH			
C1.02	SITE PREPARATION PLAN - NORTH			
C2.00	OVERALL SITE LAYOUT PLAN			
C2.01	SITE GRADING & DRAINAGE PLAN - SOUTH			
C2.02	SITE GRADING & DRAINAGE PLAN - NORTH			
C4.00	CIVIL CONSTRUCTION DETAILS			
C5.00	PRELIMINARY ELECTRICAL DETAILS			

MASSACHUSETTS DALTON SITE LOCATOR



### **GENERAL NOTES**

THE PROJECT HORIZONTAL COORDINATES SYSTEM IS BASED ON NAD83 MASSACHUSETTS STATE PLANE (US SURVEY FEET, MAINLAND ZONE, MA83F). ELEVATIONS ARE BASED ON NAVD88 (US SURVEY FEET).

PROJECT PROPERTY BOUNDARIES AND SITE TOPOGRAPHIC INFORMATION ARE BASED UPON ON-THE-GROUND FIELD SURVEY COMPLETED BY ALPHA SURVEYING AND ENGINEERING, INC. IN MARCH 2014 AS PROVIDED IN A PLAN ENTITLED "EXISTING CONDITIONS PLAN, 98 BRIDLE ROAD, WARREN LANDFILL, DALTON, MASSACHUSETTS".

- UTILITY INFORMATION DEPICTED IS COMPILED USING PHYSICAL SURFACE EVIDENCE LOCATED IN THE FIELD IN CONJUNCTION WITH ANY RECORD INFORMATION AVAILABLE AT THE TIME OF THE FIELD SURVEY AND MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. THEREFORE ALL UTILITY LOCATIONS SHOULD BE CONSIDERED APPROXIMATE AND BE VERIFIED BY THE CONTRACTOR. DIGSAFE SHALL BE NOTIFIED A MINIMUM OF 72-HOURS PRIOR TO COMMENCING ANY EXCAVATION. FULL UTILITY COORDINATION WITH NON-MEMBER UTILITIES AND USE OF GROUND-PENETRATING RADAR TO LOCATE UTILITIES SHOULD BE PERFORMED AS NECESSARY.
- LIMIT OF LANDFILL CAP IS BASED ON RECORD INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE. LOCATIONS OF MONITORING WELLS AND GAS VENTS ARE BASED ON A COMBINATION OF SURVEYING DATA AND RECORD INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND LOCATION OF STRUCTURES PRIOR TO INITIATING CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SITE CONDITIONS THAT DIFFER FROM THOSE SHOWN HEREIN. LANDFILL SITE INFRASTRUCTURE AND MONITORING LOCATIONS SHOULD BE PROTECTED THROUGHOUT CONSTRUCTION.
- NATURAL RESOURCE AND ZONING INFORMATION ARE FROM STATE OF MASSACHUSETTS GIS DATA.
- THIS IS A PRELIMINARY DESIGN PLAN. FINAL DESIGN SHALL BE MODIFIED BY CONTRACTOR TO MATCH FINAL ELECTRICAL INTERCONNECTION STUDIES, EQUIPMENT PURCHASED, AND POSSIBLE PERMIT CONSTRAINTS REVEALED DURING PROJECT'S REVIEW. ELECTRICAL EQUIPMENT LAYOUT, INCLUDING SOLAR ARRAY, EQUIPMENT PADS, UTILITY POLES, ETC. WERE PROVIDED BY CITIZENS CORPORATION IN A CAD FILE DATED OCTOBER 18, 2022.
- ALL WORK DETAILED ON THESE PLANS AND PERFORMED UNDER THIS CONTRACT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, THE PROJECT GEOTECHNICAL REPORT, PERMIT CONDITIONS, AND ANY OTHER APPLICABLE TECHNICAL REPORTS. WHERE INDICATED, STATE AND/OR LOCAL STANDARD SPECIFICATIONS SHALL APPLY. ALL WORK SHALL COMPLY WITH THE ASSOCIATED STANDARDS SET FORTH IN THE TOWN OF DALTON ZONING BYLAWS.
- THE CONTRACTOR SHALL ABIDE BY ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS, INCLUDING STATE AND FEDERAL REQUIREMENTS WITH RESPECT TO STORMWATER
- THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITY LINES AND SITE INFRASTRUCTURE WITHIN OR ADJACENT TO THE CONSTRUCTION AREA. ANY DAMAGE TO EXISTING FACILITIES CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
- . CONSTRUCTION SHALL NOT OCCUR IN ANY PUBLIC RIGHTS OF WAY. PUBLIC OR PRIVATE EASEMENTS, BEYOND THE LIMITS OF DISTURBANCE, OR OUTSIDE THE PROPERTY LIMITS WITHOUT NECESSARY PERMITS. ANY PUBLIC OR PRIVATE PROPERTY OR IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER AT THE COST OF THE
- OVERNIGHT PARKING OF CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS OR DESIGNATED TRAFFIC LANES. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL WITHIN THE PUBLIC RIGHT OF WAY. OVERNIGHT PARKING OF CONSTRUCTION VEHICLES ON PRIVATE PROPERTY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE LANDOWNER FOR SITE ACCESS AND USE AND SHALL COMPLETE WORK IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ACCESS AGREEMENT.
- ALL PROPERTY CORNERS OR MONUMENTS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ALL PROPERTY CORNERS MUST BE RESET BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF
- CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS CONTROLLING THE POLLUTION OF THE
- CONTRACTOR TO ENSURE ALL WORK PERFORMED IS IN ACCORDANCE WITH EXISTING PROJECT PERMITS, STUDIES, AND REPORTS PROVIDED IN THE CONTRACT DOCUMENTS INCLUDING STATE STORMWATER MANAGEMENT PERMIT, STATE SOLID WASTE REGULATIONS, STATE LANDFILL POST-CLOSURE USE PERMIT, AND LOCAL ORDINANCES
- 3. IT IS THE INTENT OF THESE PLANS THAT THE CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE THE IDENTIFIED PROJECT BOUNDARIES AND APPROVED LIMITS OF DISTURBANCE.
- WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES SHOULD TAKE PLACE UPGRADIENT TO AND LESS THAN 50 FEET OF ANY PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. ALL AREAS WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS NOVEMBER 1 THROUGH APRIL 15. EXPOSED AREAS UPGRADIENT TO AND LESS THAN 100 FEET OF ANY PROTECTED NATURAL RESOURCE MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7
- . CONTRACTOR IS RESPONSIBLE FOR MAINTAINING DRAINAGE THROUGHOUT THE CONSTRUCTION OF THE PROJECT.
- . EXISTING ACCESS ROADS TO BE MAINTAINED SHALL BE SMOOTHED AND RESURFACED AS NECESSARY TO PROVIDE AN ACCEPTABLE
- THE CONTRACTOR SHALL SECURE PERMITS FROM THE STATE AND TOWN OF DALTON AS NECESSARY BEFORE DRIVING CONSTRUCTION EQUIPMENT OVER AND ACROSS STATE AND TOWN MAINTAINED ROADS.
- ALL WORK IN THE PUBLIC RIGHTS OF WAY SHALL CONFORM WITH THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES".
- THE INTEGRITY OF THE LANDELL COVER SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. THERE SHALL BE NO PENETRATIONS INTO THE COVER OR REMOVAL OF COVER MATERIAL UNLESS SPECIFIED IN THESE PLANS OR PRIOR APPROVAL IS GRANTED BY
- 3. IF DAMAGE TO THE LANDFILL COVER OCCURS, IT SHALL BE RESTORED TO PREEXISTING CONDITIONS AS SOON AS POSSIBLE. THE LANDFILL COVER SYSTEM IS COMPRISED OF (FROM BOTTOM TO TOP) A 6-INCH SAND GAS VENT LAYER, A GEOCOMPOSITE CLAY LINER (GCL) IMPERMEABLE LAYER, A 12-INCH SAND DRAINAGE LAYER, AND 12-INCH VEGETATIVE SUPPORT MATERIAL LAYER.
- ONLY LOW GROUND PRESSURE EQUIPMENT (HAVING A CONTACT PRESSURE OF 10 PSI OR LESS), SUCH AS TRACK-MOUNTED CONSTRUCTION EQUIPMENT AND RUBBER-TIRED LANDSCAPING EQUIPMENT, SHALL TRAVEL DIRECTLY ON THE LANDFILL COVER. ALL OTHER EQUIPMENT SHALL BE ROUTED OVER ACCESS ROADS. TEMPORARY ACCESS ROADS SHOULD BE PROVIDED AT NO ADDITIONAL
- . WHERE APPROVAL OR DIRECTION BY AN ENGINEER IS SPECIFIED, THIS INCLUDES A QUALIFIED ENGINEER OR PROFESSIONAL (MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER (PE), CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENTATION CONTROL (CPESC), OR SIMILAR SPECIALIST).

### **HOUSEKEEPING NOTES**

DAYS, OR PRIOR TO A STORM EVENT.

CONTRACTOR SHALL MAINTAIN THE PROJECT SITE IN ACCORDANCE WITH THE FOLLOWING PERFORMANCE STANDARDS:

COST TO THE OWNER IF RECURRING DAMAGE TO THE LANDFILL COVER OCCURS.

PREVENTION: CONTROLS SHALL BE IN PLACE TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS USED AND STORED ONSITE. APPROPRIATE CONTROLS INCLUDE. BUT ARE NOT LIMITED TO, PROPER STORAGE PRACTICES THAT MINIMIZE EXPOSURE OF MATERIALS TO STORMWATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.

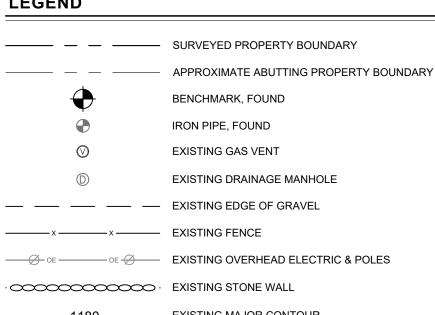
GROUNDWATER PROTECTION: DURING CONSTRUCTION, THE CONTRACTOR MAY NOT STORE OR HANDLE LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER IN AREAS OF THE PROJECT SITES DRAINING TO AN INFILTRATION AREA OR WITHIN 100 FEET OF A CRITICAL RESOURCE AREA OR STREAM, DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORING AND HANDLING LIQUID HAZARDOUS MATERIALS.

SITIVE SEDIMENT AND DUST: CONTRACTOR SHALL TAKE ALL NECESSARY ACTIONS TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD WET DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH WATER. CALCIUM CHLORIDE AND OIL MAY NOT BE USED FOR DUST CONTROL. CONTRACTOR SHALL MONITOR VEHICLES ENTERING AND EXITING THE PROJECT SITE FOR EVIDENCE OF TRACKING MUD ONTO PUBLIC OR PRIVATE ROADWAYS OUTSIDE THE WORK AREA. IF NECESSARY, CONTRACTOR SHALL PROVIDE MEANS FOR SWEEPING AND CLEANING ROAD AREAS EXPERIENCING TRACKING. PAVED SURFACES SHALL BE VACUUM SWEPT WHEN DRY. IF OFF-SITE TRACKING OCCURS ON PUBLIC ROADS, THEY SHOULD BE SWEPT IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. DURING THE MUD SEASON IT MAY BE NECESSARY TO INCREASE THE SIZE OF STABILIZED CONSTRUCTION ENTRANCES OR PROVIDE A WHEEL WASHING STATION.

DEBRIS AND OTHER MATERIALS: CONTRACTOR SHALL MANAGE ALL LITTER, CONSTRUCTION DEBRIS, CONSTRUCTION CHEMICALS, AND BUILDING AND LANDSCAPING MATERIALS EXPOSED TO STORMWATER TO PREVENT MATERIALS FROM BECOMING A SOURCE OF POLLUTION.

- TRENCH OR FOUNDATION DEWATERING: TRENCH DEWATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS. COFFER DAMS, PONDS, SUMPS, BASINS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE CONTRACTOR SHALL REMOVE COLLECTED WATER FROM THE PONDED AREAS, EITHER THROUGH GRAVITY OR PUMPING, IN A MANNER THAT SPREADS IT THROUGH NATURAL WOODED BUFFERS OR TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE (E.G. COFFERDAM SEDIMENT BASIN). THE CONTRACTOR SHALL AVOID PRACTICES THAT ALLOW SEDIMENT LADEN WATER FROM DEWATERING TO FLOW OVER DISTURBED AREAS OF THE PROJECT SITES. OTHER MEASURES OR METHODS MAY BE UTILIZED AS REVIEWED AND APPROVED BY THE ENGINEER AND, IF NECESSARY, THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
- AUTHORIZED NON-STORMWATER DISCHARGES: THE CONTRACTOR SHALL IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHALL BE TAKEN TO ENSURE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENTS OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE: DISCHARGES FROM FIREFIGHTING ACTIVITY, FIRE HYDRANT FLUSHING DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS, ROUTINE EXTERNAL, PAVEMENT WASHWATER (EXCLUDING AREAS OF SPILLS OR LEAKS OF TOXIC/HAZARDOUS MATERIALS AND USE OF DETERGENTS), UNCONTAMINATED GROUNDWATER OR SPRING WATER, FOUNDATION OR FOOTING DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED, UNCONTAMINATED EXCAVATION DEWATERING, POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHING, AND LANDSCAPE IRRIGATION.
- UNAUTHORIZED NON-STORMWATER DISCHARGES: THE CONTRACTOR SHALL IDENTIFY AND PREVENT CONTAMINATION BY UNAUTHORIZED NON-STORMWATER DISCHARGES. UNAUTHORIZED STORMWATER DISCHARGES INCLUDE, BUT ARE NOT LIMITED TO, WASTEWATER FROM CONCRETE WASHOUT, FUELS OR HAZARDOUS SUBSTANCES, AND DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING.
- ADDITIONAL REQUIREMENTS: COMPLETION OF THE WORK WILL REQUIRE FREQUENT ACCESS TO VARIOUS PORTIONS OF THE PROJECT AREA FROM STATE AND LOCAL ROADWAYS. CONTRACTOR SHALL MONITOR PUBLIC ROADWAYS AND SHALL CLEAN PAVEMENT BY MEANS NECESSARY IN THE EVENT THAT SEDIMENT OR TRACKING IS OBSERVED. SIGNAGE SHALL BE POSTED AT INTERSECTIONS OF PROJECT ACCESS ROADS AND PUBLIC WAYS, STATING COMPANY NAME AND 24-HOUR CONTACT PHONE NUMBER.

### **LEGEND**



— — — — 1180 — — — EXISTING MAJOR CONTOUR — — — — 1179 — — EXISTING MINOR CONTOUR EXISTING SPOT ELEVATION x 1179.7

. . . . EXISTING TREES AND/OR BRUSH DEP MAPPED WETLAND

— — — 100' RESOURCE BUFFER 200' RIVERFRONT AREA — · — · — · — · — NHESP PRIORITY HABITAT

DEP MAPPED STREAM

PROPOSED GRAVEL ACCESS PROPOSED RIP RAP —(1180)——— PROPOSED MINOR CONTOUR

—— PROPOSED MAJOR CONTOUR . PROPOSED TREE LINE/CLEARING LIMITS

PROPOSED OVERHEAD ELECTRIC LINE AND POLES 

PROPOSED FIXED-TILT ARRAY RACKING WITH BALLASTS

AQUIFER PROTECTION DISTRICT

LIMITS OF DISTURBANCE

### **ZONING REQUIREMENTS**

ZONING DISTRICTS SUMMARY TABLE		
OVERLAY ZONING DISTRICTS		
AQUIFER PROTECTION DISTRICT		

DIMENSIONAL STANDARDS								
DISTRICT	MIN. FRONT Y	ARD SETBACK	MIN. SIDE YA	RD SETBACK	MIN. REAR YA	ARD SETBACK	BUILDING M	AX. HEIGHT
	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
RESIDENTIAL / AGRICULTURAL DISTRICT (R-1)	35'	N/A	25'	25'	30'	160'	15'	<15'

### PROJECT SITE INFORMATION

DARCELIR		PARCEL ADDRESS	DADCEL AREA (AC)	OVAVNIED NIABAE	OWNER ADDRESS	TOWN	CTATE	710 CODE
PARCEL ID		PARCEL ADDRESS	PARCEL AREA (AC.)	OWNER NAME	OWNER ADDRESS	TOWN	STATE	ZIP CODE
MAP 106, LC	T 55	BRIDLE ROAD	31	GREYSKY, LLC	32 COLMAN DRIVE	WOLCOTT	СТ	06716

### PROJECT SCHEDULE

SPECIFICS OF HOW WORK IS TO BE COMPLETED SHALL ALSO BE BASED ON ENVIRONMENTAL CONSIDERATIONS ASSOCIATED WITH SEASONAL CHANGES. THE FOLLOWING DATES ARE PROVIDED TO ESTABLISH A GENERAL GUIDELINE FOR THESE SEASONS:

NOVEMBER 1 TO MARCH 19 - MUD SEASON: MARCH 20 TO APRIL 30

 SPRING: MAY 1 TO JUNE 21 - SUMMER: JUNE 22 TO SEPTEMBER 2° SEPTEMBER 22 TO OCTOBER 31

### **MULCH ANCHORING REQUIREMENTS**

ON SLOPES GREATER THAN 3 PERCENT, STRAW MULCH WILL BE FIRMLY ANCHORED INTO THE SOIL UTILIZING ONE OF THE FOLLOWING

-CRIMPING WITH A STRAIGHT OR NOTCHED MULCH CRIMPING TOOL (FARM DISCS WILL NOT BE ALLOWED): -TRACK WALKING WITH DEEP-CLEATED EQUIPMENT OPERATING UP AND DOWN THE SLOPE (MULCH CRIMPED PERPENDICULAR TO THE SLOPE) ON SLOPES <25 PERCENT; -APPLICATION OF MULCH NETTING:

-APPLICATION OF 1000 LB./ACRE OF WOOD FIBER MULCH OVER STRAW/HAY MULCH; AND -COMMERCIALLY AVAILABLE TACKIFIERS (EXCEPT WITHIN 100 FEET OF WATERBODIES OR WETLANDS).

### **SEED AND MULCH SPECIFICATIONS**

SEED MIX SPECIFICATIONS				
SEED MIX NAME SEED MIX COMPONENTS LB./ACRE <sup>1</sup>				
TEMPORARY SEED MIX	ANNUAL RYEGRASS	40		
PERMANENT SEED MIX	MASSDOT SEED MIX NO. 765.451 PART SHADE ROADSIDE MIX (OR APPROVED EQUAL)	30		
SUPPLEMENTAL WINTER SEED MIX <sup>2</sup>	WINTER RYEGRASS	120		
NOTES.				

1. INCREASE SEEDING RATES 10% WHEN HYDROSEEDING 2. WINTER RYE WILL BE ADDED TO PERMANENT SEED MIX AT A RATE OF 120 LB./ACRE BETWEEN AUGUST 15 AND OCTOBER 15

SUMMAF	RY OF TEMPORARY AND PERMANENT MULCH APPLIC	CATION REQUIREMENTS						
CONDITION TIMING		MULCH TYPE	APPLICATION RATES					
TEMPORARY	TEMPORARY							
INACTIVE AREAS	IF NO ACTIVITY IN EXPOSED AREAS FOR 7 DAYS, OR PRIOR TO A STORM EVENT	STRAW MULCH OR WOOD FIBER MULCH OR EROSION CONTROL MIX	1000 LB./ACRE 1000 LB./ACRE 2" THICK OVER AREA					
ALL DISTURBED AREAS OF THE CONSTRUCTION WORKSPACE	APPLY MULCH TO ALL EXPOSED AREAS IF NO ACTIVITY OCCURS WITHIN 30 DAYS. APPLY MULCH AND TEMPORARY SEEDING SOONER WHEN IT CAN BE ANTICIPATED THAT ACTIVITY IS NOT GOING TO OCCUR WITHIN 30 DAYS.	STRAW MULCH OR WOOD FIBER MULCH	1000 LB./ACRE					
ALL WORK AREAS EXPOSED ARE TO BE MULCHED DAILY EACH TIME SOIL IS DISTURBED <sup>5</sup>	NOVEMBER 1 - APRIL 15	STRAW MULCH OR WOOD FIBER MULCH	1000 LB./ACRE					
PERMANENT								
ON ALL EXPOSED AREAS AFTER SEEDING TO STABILIZE THE SOIL SURFACE	PERMANENT GRASS AND/OR LEGUME SEEDING COVERED BY STRAW MULCH ON ALL AREAS THAT HAVE BEEN RESTORED TO FINAL GRADE. THIS DOES NOT APPLY TO AREAS STABILIZED BY OTHER MEANS SUCH AS JUTE MATTING OR PERMANENT EROSION CONTROL MIX.	CRIMPED STRAW MULCH OR PAPER MULCH OR WOOD FIBER MULCH	1000 LB./ACRE					

1. IN ALL CASES, SUFFICIENT MULCH SHALL BE APPLIED SUCH THAT NO SOIL IS VISIBLE THROUGH THE MULCH. 2. DOUBLE RATE OF WOOD FIBER MULCH WHEN USED IN OR ADJACENT TO CRITICAL AREAS. DOUBLE RATE OF MULCH UNDER SOLAR ARRAY DRIP EDGE. 3. PAPER MULCH IS ACCEPTABLE FOR USE DURING THE GROWING SEASON. ON SLOPES >30 PERCENT AND IN AREAS WHERE VEGETATION HAS NOT

	SUMMARY OF SEEDING REQUIREMENTS	
CONDITION	TIMING <sup>1,2</sup>	SEED MIX
TEMPORARY SEEDING <sup>3</sup>	TEMPORARY SEED BETWEEN APRIL 1 AND JUNE 30 OR SEPTEMBER 1 AND SEPTEMBER 30. DISTURBED AREAS OR SOIL STOCKPILES WILL BE SEEDED IMMEDIATELY IF FURTHER DISTURBANCE IS NOT EXPECTED FOR 30 DAYS OR MORE.	TEMPORARY SEED MIX
PERMANENT SEEDING <sup>3,4</sup>	SEED BETWEEN APRIL 1 AND MAY 31 OR AUGUST 1 AND SEPTEMBER 10	PERMANENT SEED MIX
UPLAND PORTIONS OF THE CONSTRUCTION AREA	DISTURBED AREA WILL BE SEEDED WITHIN 7 DAYS OF FINAL GRADING.	PERMANENT SEED MIX
SLOPES > 3:1	DISTURBED AREA WILL BE SEEDED IMMEDIATELY AFTER SEEDBED PREPARATION.	PERMANENT SEED MIX
WINTER DORMANT SEEDING	DORMANT SEED BETWEEN NOVEMBER 1 AND DECEMBER 15 ONLY. NO SEEDING WILL OCCUR IF SNOW DEPTHS EXCEED 1 INCH.	PERMANENT SEED MIX PLUS SUPPLEMENTAL WINTER SEED MIX

1. WEATHER CONDITIONS PERMITTING

4. MULCH MAY NOT BE SPREAD ON TOP OF SNOW

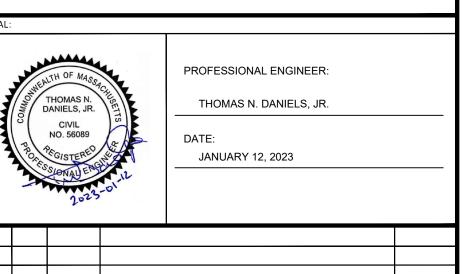
2. AREAS THAT DO NOT SUCCESSFULLY REVEGETATE WITHIN APPROPRIATE PERIOD OF TIME WILL BE RESEEDED AS NECESSARY.

3. LOOSEN COMPACTED SOIL TO A MINIMUM DEPTH OF 2 TO 4 INCHES. 4. TOP DRESS WITH 4 TO 6 INCHES LOAM, AS NEEDED.

ESTABLISHED WELL, ADDITIONAL HAY MULCH WILL BE ADDED AS A WINTERIZING MEASURE

PERMITTING NOT FOR CONSTRUCTION





TRC | 01/12/2023 | ISSUED FOR MADEP SW POST-CLOSURE USE PERMIT 0 TRC 01/05/2023 ISSUED FOR PERMITTING NO. BY DATE APP'D. CITIZENS ENERGY CORP WARREN FARMS SOLAR LLC

PROPOSED 2.66 MW-AC SOLAR ARRAY & BESS PROJECT DALTON, BERKSHIRE COUNTY, MASSACHUSETTS

GENERAL NOTES & LEGEND DRAWN BY: TRC PROJ. NO.: 421646 G1.01



650 Suffolk Street Suite 200 Lowell, MA 01854 Phone: 978.970.5600

421646 - G SHEETS.dwg

### PROJECT DESCRIPTION

THE PROJECT INVOLVES THE CONSTRUCTION OF A GROUND-MOUNTED PHOTOVOLTAIC SOLAR MODULE SYSTEM AND ALL RELATED ACCESS ROADS, UTILITIES, SITE PREPARATION, CLEARING & GRUBBING, EROSION & SEDIMENTATION CONTROL MEASURES, AND GRADING. EROSION AND SEDIMENTATION CONTROL BEST MANAGEMENT PRACTICES WITH GROUND PENETRATING FEATURES ARE NOT PERMITTED FOR USE WITHIN LIMITS OF LANDFILL CAP

### CONSTRUCTION SEQUENCE

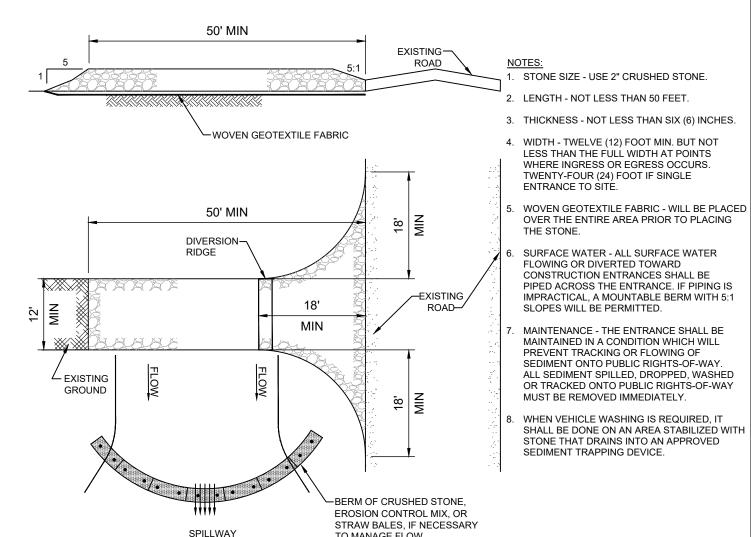
- ESTABLISH CONSTRUCTION WORKSPACE LIMITS; IDENTIFY AND MARK SENSITIVE RECEPTORS INCLUDING NATURAL RESOURCES
- INSTALLATION OF ALL EROSION AND SEDIMENT CONTROL MEASURES AND ASSOCIATED WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE "MASSACHUSETTS EROSION AND SEDIMENTATION CONTROL GUIDELINES FOR URBAN AND SUBURBAN
- PRIOR TO USAGE, CONSTRUCT AND STABILIZE THE CONSTRUCTION ENTRANCE IN THE LOCATION INDICATED ON THE SITE GRADING AND DRAINAGE PLAN SHEET. AT A MINIMUM, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED AT EACH POINT OF ACCESS/EGRESS FROM THE PROJECT AREA TO EXISTING ACCESS ROADS AT THE PROJECT SITE.
- CLEAR BRUSH, SMALL TREES, AND MOW LANDFILL COVER WITHIN PROJECT AREA; GRUBBING SHALL NOT BE COMPLETED UNTIL JUST PRIOR TO PRELIMINARY GRADING AND ESTABLISHMENT AND STABILIZATION OF TEMPORARY OR PERMANENT DRAINAGE
- INSTALL AND MAINTAIN PERIMETER SEDIMENT BARRIERS SUCH AS SILT FENCING AND OTHER APPROVED EROSION CONTROL BARRIERS ALONG THE DOWNHILL LIMIT OF DISTURBANCE AS SHOWN ON THE DRAWINGS. SEDIMENT BARRIER LOCATIONS MAY BE ADJUSTED IN THE FIELD BASED ON ACTUAL SITE CONDITIONS AS DEEMED NECESSARY TO ENSURE PROPER FUNCTION. WHERE SILT FENCE CANNOT BE TOED-IN PROPERLY DUE TO TREE ROOTS, ROCKS, OR FROZEN GROUND, HAY BALES OR AN EROSION CONTROL MIX BERM MAY BE SUBSTITUTED. PERIMETER SEDIMENT BARRIERS SHALL BE INSTALLED AS SOON AS POSSIBLE BUT MAY FOLLOW INITIAL SITE PREPARATION. EROSION OR SEDIMENTATION ISSUES DEVELOPING DURING INITIAL SITE PREPARATION SHALL BE TEMPORARILY STABILIZED AS NECESSARY. ANY EROSION AND SEDIMENT CONTROL MEASURES PLACED ON THE LANDFILL COVER SURFACE SHALL BE NON-GROUND PENETRATING, SUCH AS COMPOST FILTER SOCKS HELD IN PLACE BY SANDBAGS.
- CONSTRUCT TEMPORARY ACCESS ROADS AS NEEDED TO ROUTE TRAFFIC FROM PROPOSED ACCESS ROAD LOCATION ONTO LANDFILL. ONLY LOW GROUND PRESSURE EQUIPMENT MAY BE USED DIRECTLY ON LANDFILL COVER. TEMPORARY ACCESS ROAD SHALL BE REMOVED AS SOLAR ARRAY CONSTRUCTION PROGRESSES FROM FAR EXTENTS OF LANDEILL LIMITS TO CENTER UNDERLYING AND SURROUNDING LANDFILL COVER SHALL BE RESTORED AS NEEDED.
- STABILIZE PERMANENT ACCESS ROAD SURFACES, PARKING AREAS, AND EQUIPMENT STORAGE AND LAYDOWN AREAS WITH MATTING, CRUSHED STONE, OR GRAVEL SUBBASE AS NECESSARY TO MINIMIZE RUTTING AND AVOID PONDING OF STORMWATER.
- CONCURRENT WITH INITIATION OF SITE GRADING, CONSTRUCT AND STABILIZE TEMPORARY DRAINAGE SWALES, DIVERSION BERMS, CHECK DAMS. AND CULVERTS WITH TEMPORARY INLET AND OUTLET PROTECTION TO MINIMIZE SEDIMENT IN SITE RUNOFF DURING CONSTRUCTION, DEWATERING SHALL BE IN ACCORDANCE WITH THE DEWATERING NOTES.
- INSTALL PROPERLY SPACED STONE CHECK DAMS IN ANY SECTION OF DITCH WITHIN 24-HOURS OF FORMING, SHAPING, OR ROUGH
- . MINIMIZE THE AMOUNT OF DISTURBANCE AT ANY ONE TIME BY STAGING CONSTRUCTION AS MUCH AS PRACTICAL FOR EFFICIENT CONSTRUCTION OF THE FACILITY. NATURAL VEGETATIVE BUFFERS SHOULD BE LEFT IN PLACE WHERE FEASIBLE TO AID IN SEDIMENT RETENTION AND REDUCE THE POTENTIAL FOR EROSION. OPEN AREA SHALL BE LIMITED TO 5 ACRES OR NO MORE THAN CAN BE MULCHED IN A SINGLE DAY, WHICHEVER IS LESS.
- I. STABILIZE ANY DISTURBED SLOPES GREATER THAN 3H:1V AND ANY SECTION OF NEWLY CONSTRUCTED DITCH USING ANCHORED EROSION CONTROL BLANKETS OR OTHER APPROVED MULCHING TECHNIQUES WITHIN 24-HOURS. ALL VEGETATED DITCHES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED ON BETWEEN NOVEMBER 1 AND APRIL 15, MUST BE STABILIZED WITH STONE LINING BACKED BY GRAVEL BED OR GEOTEXTILE AS SPECIFIED BY THE ENGINEER.
- 2. DUST CONTROL METHODS SHALL BE EMPLOYED AFTER GRADING AND PRIOR TO FINAL STABILIZATION TO PREVENT THE BLOWING AND MOVEMENT OF NUISANCE DUST THROUGH THE APPLICATION OF WATER. CALCIUM CHLORIDE SHALL NOT BE USED.
- 3. APPLY TEMPORARY SEED AND MULCH TO EXPOSED AREAS WHERE ACTIVITY IS NOT ANTICIPATED FOR 30-DAYS. TEMPORARILY MULCH ANY EXPOSED AREAS IF NO ACTIVITY FOR 7 DAYS, OR PRIOR TO A STORM EVENT.
- . REMOVE EXCESS SPOILS FROM THE SITE THAT WILL NOT BE USED FOR THE FINAL DESIGN AND STABILIZATION. STOCKPILED SOILS THAT REMAIN IN PLACE FOR 48-HOURS OR MORE SHALL BE CONTAINED WITH SEDIMENT BARRIERS. THE SEDIMENT BARRIERS SHALL BE REINFORCED TO HANDLE A SIGNIFICANT RAIN EVENT AND THE POTENTIAL SLUMPING OF THE PILE. BETWEEN APRIL 15 AND OCTOBER 1, APPLY TEMPORARY SEED AND MULCH TO A STOCKPILE THAT IS NOT ANTICIPATED TO BE DISTURBED WITHIN 30-DAYS. APPLY ANCHORED MULCH DAILY AND/OR AS NEEDED DURING WINTER CONSTRUCTION.
- . INSPECT AND REPAIR EROSION CONTROL MEASURES DAILY IN AREAS OF ACTIVE CONSTRUCTION; OTHERWISE WEEKLY AND AFTER A RAINFALL EVENT OF 0.5-INCHES OR GREATER WITHIN A 24-HOUR PERIOD. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES 1/3 OF THE HEIGHT OF THE BARRIER.
- 16. MONITOR PUBLIC ROADS FOR SIGNS OF TRACKING OR SPILLING OF SPOIL MATERIAL AND CLEAN-UP AS NECESSARY.
- 17. COMPLETE FINAL GRADING AND STABILIZATION OF EARTHEN STRUCTURES SUCH AS DIVERSION BERMS, LEVEL SPREADERS, AND SWALES THAT WILL CONTROL POST-CONSTRUCTION RUNOFF.
- 3. FINISH GRADE AND REPLACE TOPSOIL OR LOAM IN DISTURBED AREAS. SEED AND MULCH DISTURBED AREAS WITHIN 7 DAYS OF FINAL GRADING. BETWEEN NOVEMBER 1 AND APRIL 15, STABILIZE AREAS THAT ARE FINAL GRADED AT THE END OF EACH DAY.
- 19. MAINTAIN ALL TEMPORARY EROSION CONTROLS AND SEDIMENT BARRIERS UNTIL VEGETATION HAS BEEN ESTABLISHED OVER 90%OF THE AREA TO BE REVEGETATED. RESEED SPARSELY VEGETATED AREAS AS NECESSARY.
- 10. REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ONCE THE SITE IS PERMANENTLY STABILIZED.

### **DEWATERING NOTES**

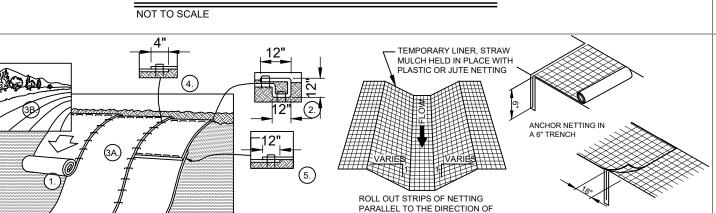
- THE CONTRACTOR SHALL INSTALL, MAINTAIN, AND OPERATE ALL CHANNELS, SUMPS, AND OTHER TEMPORARY DIVERSION AND PROTECTIVE WORKS NEEDED TO DIVERT STREAM FLOW AND OTHER SURFACE WATER THROUGH OR AROUND THE CONSTRUCTION SITE. CONTROL OF SURFACE WATER SHALL BE CONTINUOUS DURING THE PERIOD THAT DAMAGE TO CONSTRUCTION WORK COULD
- OPEN EXCAVATIONS SHALL BE DEWATERED AND KEPT FREE OF STANDING WATER AND MUDDY CONDITIONS AS NECESSARY FOR THE PROPER EXECUTION OF THE WORK. THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL DRAINS, SUMPS AND ALL OTHER EQUIPMENT REQUIRED TO PROPERLY DEWATER THE SITE. DEWATERING SYSTEMS THAT CAUSE A LOSS OF SOIL FINES FROM THE FOUNDATION AREAS WILL NOT BE PERMITTED.
- INSTALL DIVERSION DITCHES OR BERMS IF NECESSARY TO MINIMIZE THE AMOUNT OF CLEAN STORMWATER RUNOFF ALLOWED INTO
- REMOVAL OF WATER FROM THE CONSTRUCTION SITE SHALL BE ACCOMPLISHED SO THAT EROSION AND TRANSPORTATION OF SEDIMENT AND OTHER POLLUTANTS ARE MINIMIZED.
- DISCHARGE DEWATERING EFFLUENT TO AREAS AS INDICATED ON THE SITE GRADING PLAN. DISCHARGE SHALL BE MANAGED TO
- DEWATERING IN PERIODS OF INTENSE HEAVY RAIN OR WHEN THE INFILTRATIVE CAPACITY OF THE SOIL IS EXCEEDED, SHALL BE AVOIDED TO THE MAXIMUM EXTENT PRACTICABLE.
- FLOW TO THE SEDIMENT REMOVAL STRUCTURE MAY NOT EXCEED THE STRUCTURE'S CAPACITY TO SETTLE AND FILTER FLOW OR
- THE STRUCTURE'S VOLUME CAPACITY. WHEN TEMPORARY WORKS ARE NO LONGER NEEDED, THE CONTRACTOR SHALL REMOVE AND RETURN THE AREA TO A CONDITION SIMILAR TO THAT WHICH EXISTED BEFORE CONSTRUCTION. AREAS WHERE TEMPORARY WORKS WERE LOCATED SHALL BE GRADED FOR SIGHTLY APPEARANCE WITH NO OBSTRUCTION TO NATURAL SURFACE WATER FLOWS OR THE PROPER FUNCTIONING AND

ACCESS TO THE WORKS OF IMPROVEMENTS INSTALLED. THE CONTRACTOR SHALL EXERCISE EXTREME CARE DURING THE

REMOVAL STAGES TO MINIMIZE THE LOSS OF SOIL SEDIMENT AND DEBRIS THAT WAS COLLECTED DURING CONSTRUCTION.



## STABILIZED CONSTRUCTION ENTRANCE



PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED, NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED

WITH PAPER SIDE DOWN

- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 12" DEEP X 12" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTEDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH, BACKFILL AND COMPACT THE TRENCH AFTER STAPLING, APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH
- 3. ROLL THE BLANKETS (A) DOWN THE SLOPE. HORIZONTAL (B) INSTALLATION MAY BE APPROPRIATE IN SOME INSTANCES AS APPROVED BY THE ENGINEER. BLANKETS WILL LINROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
  WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN. 4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH A MINIMUM OF 4"-6"
- OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET. 5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH
- \*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" EROSION CONTROL BLANKET

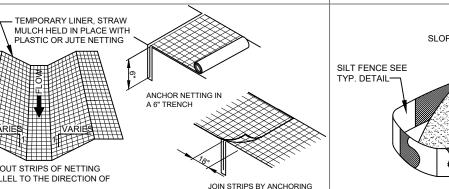
SECTION A-A

ACCESS ROAD BUILD-UP MATERIAL

18" WIDE x 6" DEEP

NONWOVEN GEOTEXTILE

- 2" DIAMETER CRUSHED STONE



"L" = THE DISTANCE SUCH THAT POINTS "A" AND "B" ARE OF EQUAL ELEVATION

SECTION B-E

UNDISTURBED EARTH

1. EXCAVATE THE CHANNEL AND SHAPE IT TO AN EVEN CROSS-SECTION AS SHOWN. WHEN STAKING INDICATE A 0.2' OVERCUT AROUND THE CHANNE BE DRY AND STABLE. 2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2H:1V. 2. GRADE SOIL AWAY FROM CHANNEL SO THAT SURFACE

- 3 APPLY LIME FERTILIZER AND SEED TO THE CHANNEL AND ADJOINING AREAS IN ACCORDANCE WITH THE 4. SPREAD HAY OR STRAW MULCH AT THE RATE OF
- 5. HOLD MULCH IN PLACE IMMEDIATELY AFTER SPREADING WITH A PLASTIC NETTING INSTALLED AS SHOWN. 6. START LAYING THE NET FROM THE TOP OF THE UPSTREAM END OF THE CHANNEL AND UNROLL IT DOWN GRADE. DO NOT STRETCH THE NETTING
- 7. BURY THE UP SLOPE END AND STAPLE THE NET EVERY 12" ACROSS THE TOP END, EVERY 3 FT AROUND THE EDGES AND ACROSS THE NET SO THAT THE STRAW IS HELD CLOSELY AGAINST THE SOIL. HOWEVER, DO NOT STRETCH THE NETTING WHEN STAPLING

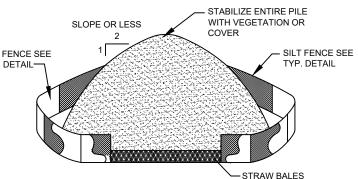
EROSION CONTROL PLAN

100LB/1000 SF.

8. NETTING STRIPS SHOULD BE JOINED TOGETHER ALONG THE SIDES WITH A 3" OVERLAP AND STAPLED TOGETHER TO JOIN ENDS OF STRIPS, INSERT A NEW ROLL OF NET IN A TRENCH AS WITH THE UP SLOPE END AND OVERLAP IT 18" WITH THE PREVIOUSLY LAID UPPER

L. TURN UNDER 6" OF THE 18" OVERLAP AND

STAPLE EVERY 12" ACROSS THE END



6' TO 10' MAX CENTER TO CENTER

FILTER CLOTH-MIRAF

**ELEVATION** 

1. WOVEN WIRE FENCE TO BE FASTENED TO FENCE

2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN

VIRE FENCE WITH TIES SPACED EVERY 24" AT TOP

3 WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN FACH

4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND

MATERIAL REMOVED WHEN BUILD-UP REACHES 1/3 THE HEIGHT OF THE FENCE.

OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.

POSTS WITH WIRE TIES OR STAPLES

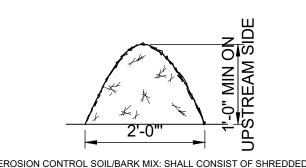
AND MIDSECTION.

OR APPROVED EQUAL

100X STABLINKA T140N

- NSTALLATION NOTES: . AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL
- 3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAW BALES, THEN STABILIZED WITH VEGETATION

typical soil stockpile



STEEL "T" OR "U" TYPE

WOVEN WIRE, 14 1/2 GA

6" MAX MESH OPENING

FILTER X, MIRAFI 100X

APPROVED EQUAL.

STABI INKA T140N OR

OR 2" HARDWOOD

UNDISTURBED

- OPTIONAL WOVEN WIRE FENCE

36" MIN FENCE POSTS DRIVEN

12" MIN INTO GROUNE

(MIN.) INTO GROUND-

FENCE:

FILTER CLOTH:

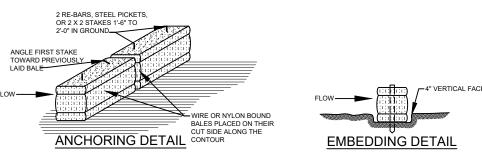
PREFABRICATED:

(MIN 14 1/2 GAUGE 6" MAX MESH SPACING)

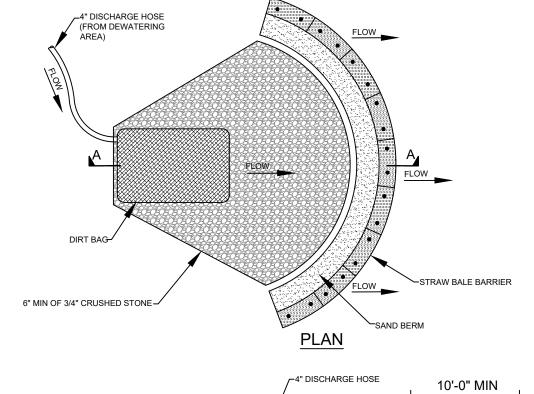
FRAGMENTED WOOD GENERATED FROM WATER-FLUME LOG HANDLING SYSTEMS. THE MIX SHALL CONFORM TO THE FOLLOWING: 1. pH - 5.0 TO 8.0. 2. SCREEN SIZE: 6" - 100% PASSING 3/4" - 70% TO 85% PASSING MIX SHALL NOT CONTAIN LARGE PORTIONS OF SILTS, CLAYS OR

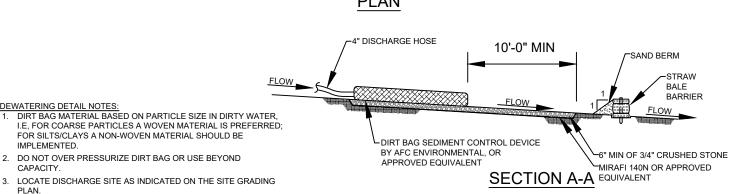
BARK, STUMP GRINDINGS, COMPOSTED BARK OR FLUME GRIT AND

3. ORGANIC MATERIAL 20% - 100% (DRY WEIGHT BASIS) ORGANIC PORTION MUST BE FIBROUS AND ELONGATED 4. SOLUBLE SALTS SHALL BE < 4.0 mmhos/cm EROSION CONTROL BERM



### STRAW BALF BARRIFR

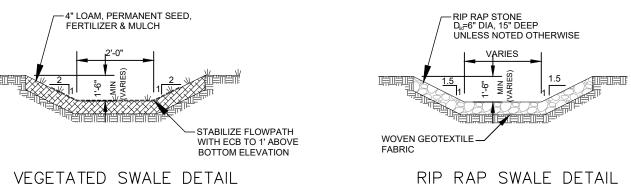




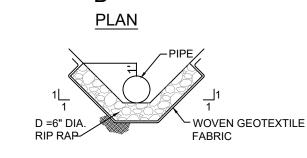
2. DO NOT OVER PRESSURIZE DIRT BAG OR USE BEYOND

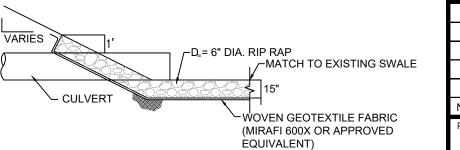
OR OTHERWISE STABLE FROM EROSION, E.G., PERMANENT VEGETATION OR COARSE GRAVEL/STONE. 5. DISCHARGE OF DEWATERING ACTIVITIES PROHIBITED WITHIN 25' OF A NATURAL RESOURCE.

# EXCAVATION DEWATERING DETAIL



-D₀= 6" DIA. RIP RAF





### **SECTION A-A**

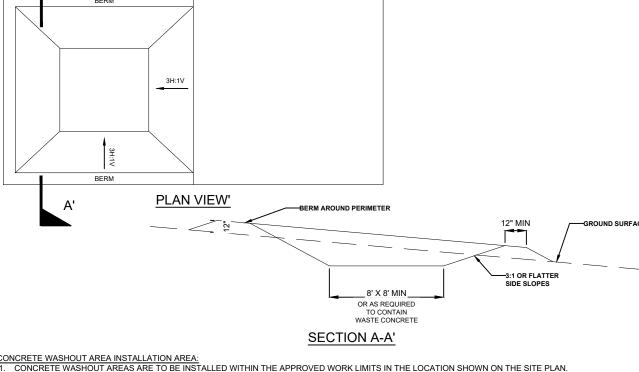
**SECTION B-**

**OUTLET PROTECTION SCHEDULE** CULVERT ID CULVERT DIA. (D) LENGTH (L) SD-1 12' SD-2 SD-3 2 X 18"

AT CULVERT OUTLETS.

EXISTING RIP RAP SWALE SHALL BE IMPROVED ACCORDING

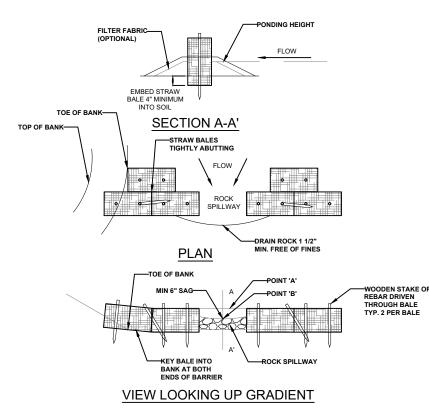
TO THIS DETAIL FOR MINIMUM LENGTH SPECIFIED ABOVE



- 2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON THE SITE. 3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT
- 4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS. 5. MATERIAL EXCAVATED TO CREATE CONCRETE WASHOUT PIT SHALL BE UTILIZED TO CONSTRUCT PERIMETER BERM AROUND PIT
- CONCRETE WASHOUT AREA MAINTENANCE NOTES: THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED

2. AT THE END OF CONSTRUCTION, REMOVE ALL CONCRETE, COVER THE DISTURBED AREA WITH TOPSOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE

CONCRETE WASHOUT AREA



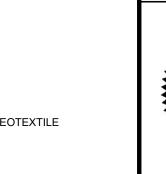
. PLACE BALES PERPENDICULAR TO FLOW. 2. EMBED THE BALE 4" INTO THE SOIL AND KEY THE END BALES INTO THE SOIL AND

"KEY" THE END BALES INTO THE CHANNEL BANKS TO PREVENT FLOW AROUND THE

4. POINT "A" SHALL BE HIGHER THAN POINT "B." 5 SPILLWAY HEIGHT SHALL NOT EXCEED 24" 6. SILT FENCE MAY BE USED IN LIEU OF BALES (FOLLOW SAME GUIDELINES).

SEMI-PERVIOUS SEDIMENT BARRIER

NOT FOR CONSTRUCTION



PROFESSIONAL ENGINEER: THOMAS N. DANIELS, JR.

JANUARY 12, 2023

I/12/2023 I ISSUED FOR MADEP SW POST-CLOSURE USE PERMIT

1/05/2023 I ISSUED FOR PERMITTING IO. BY DATE CITIZENS ENERGY CORP WARREN FARMS SOLAR LLC

PROPOSED 2.66 MW-AC SOLAR ARRAY & BESS PROJECT DALTON, BERKSHIRE COUNTY, MASSACHUSETTS

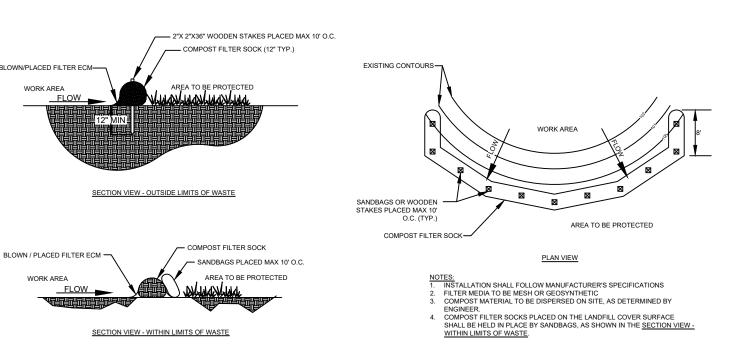
EROSION CONTROL NOTES & DETAILS

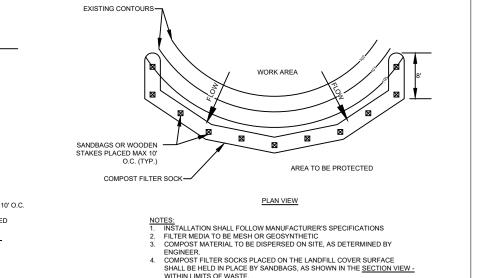
TRC PROJ. NO.: DRAWN BY 421646 HECKED BY: G1.02 TND

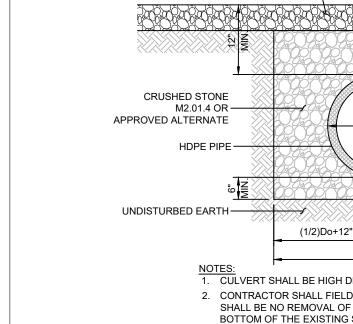
650 Suffolk Street Suite 200 Lowell, MA 01854 Phone: 978.970.5600

APP'D.

421646 - G SHEETS.dwg





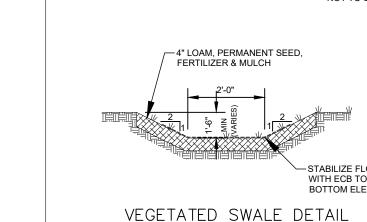


. CULVERT SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) PIPE. 2. CONTRACTOR SHALL FIELD FIT CULVERT TO ENSURE THERE IS POSITIVE DRAINAGE. THERE SHALL BE NO REMOVAL OF LANDFILL COVER MATERIAL TO A DEPTH GREATER THAN THE BOTTOM OF THE EXISTING SWALES. 3. THERE SHALL BE A MINIMUM 1' OF SOIL COVER OVER CULVERT.

(1/2)Do+12"

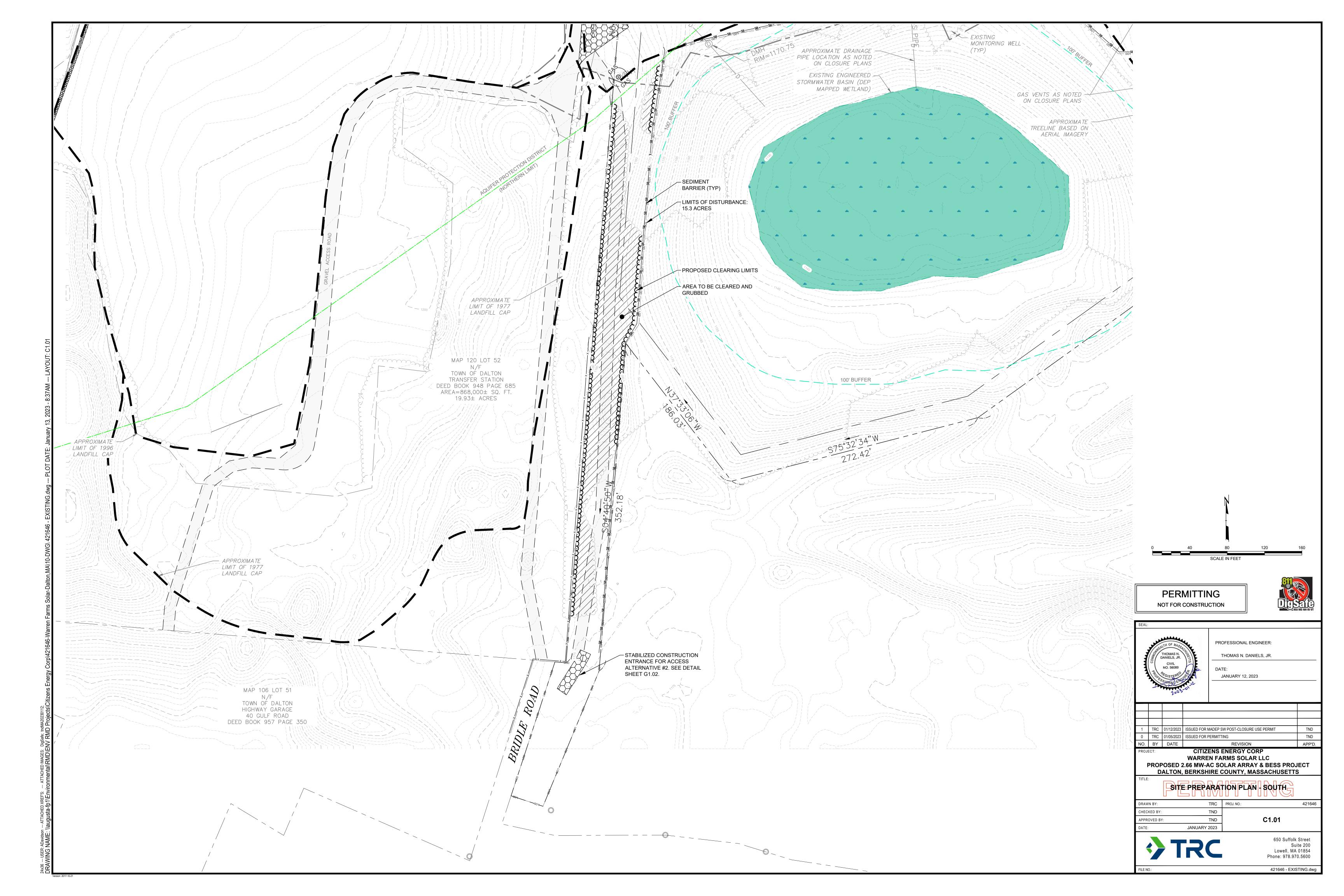
NOTE: INSTALL WHERE INDICATED ON SITE GRADING PLAN AND AS NEEDED BY SPACING REQUIREMENTS

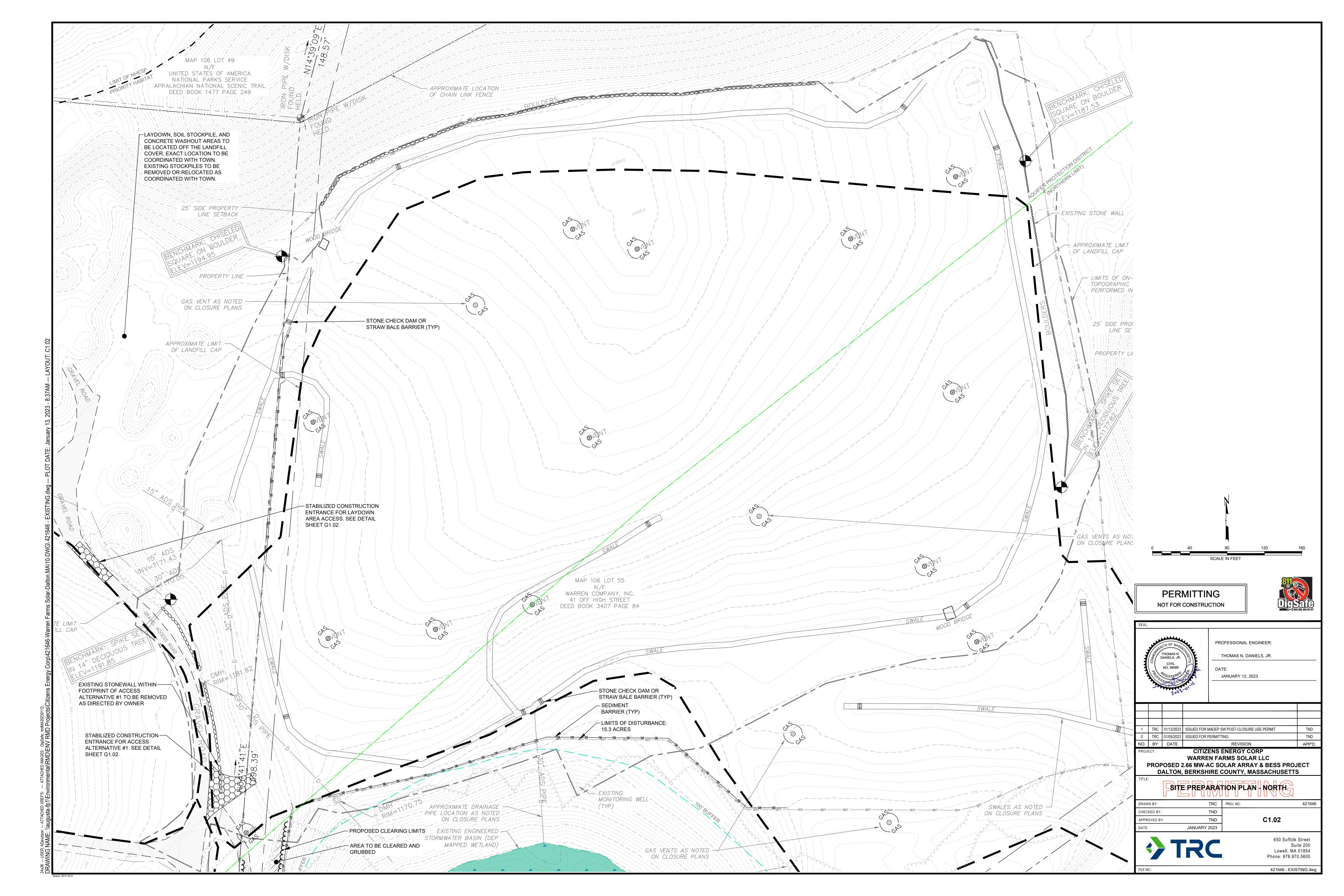
CHECK DAM DETAILS

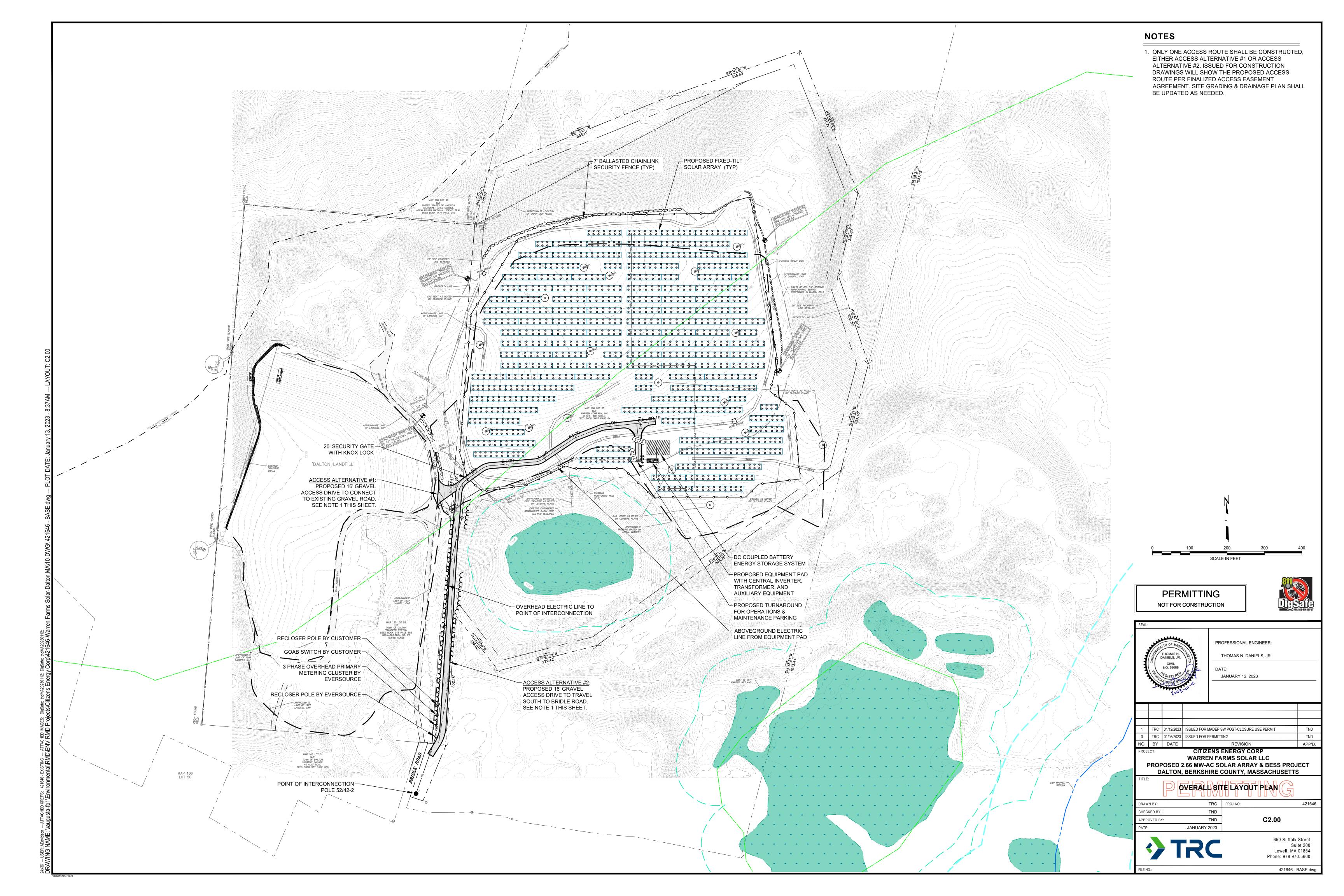


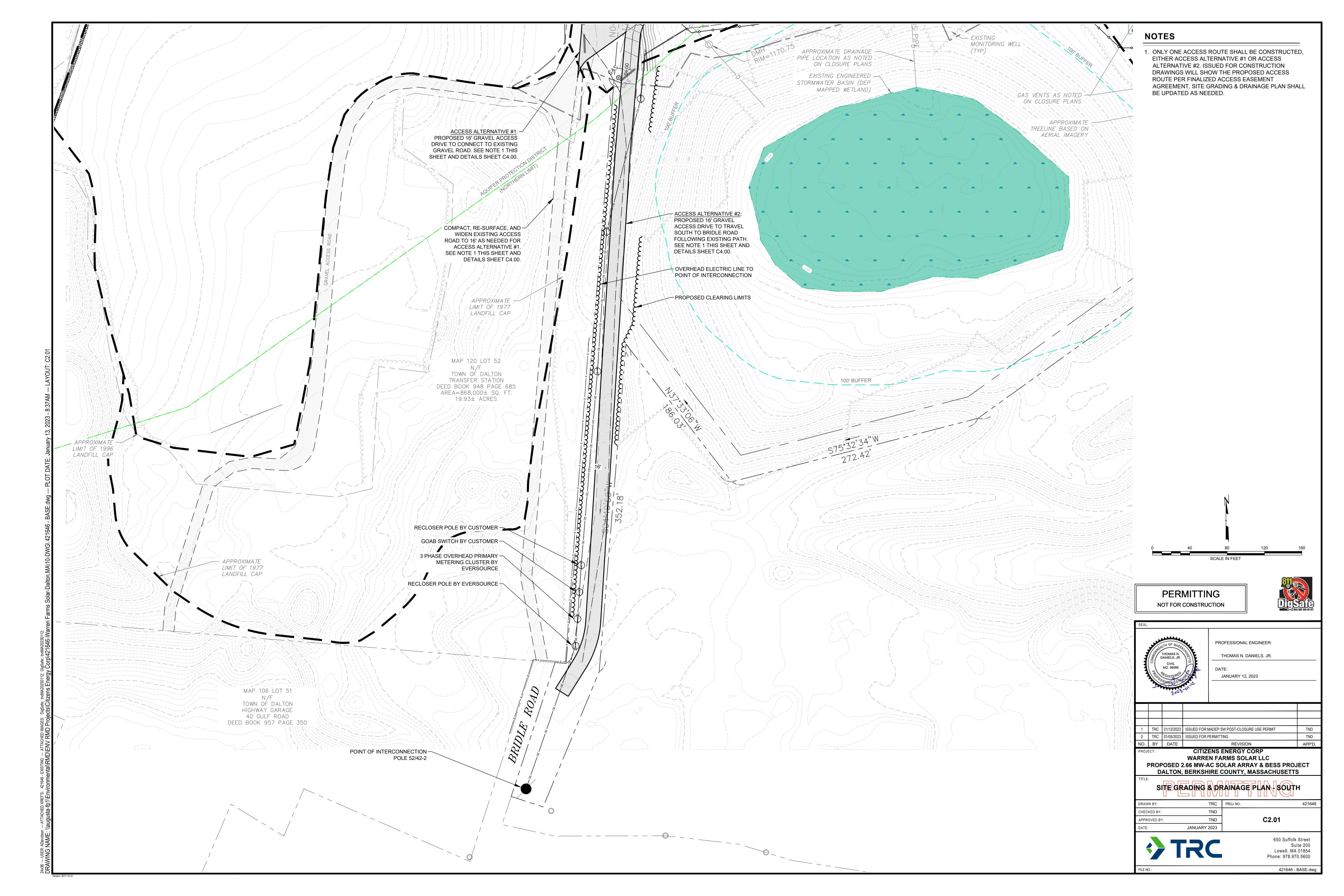
4. CULVERTS COLLOCATED SHALL BE SPACED A MINIMUM OF ONE CULVERT DIAMETER APART.

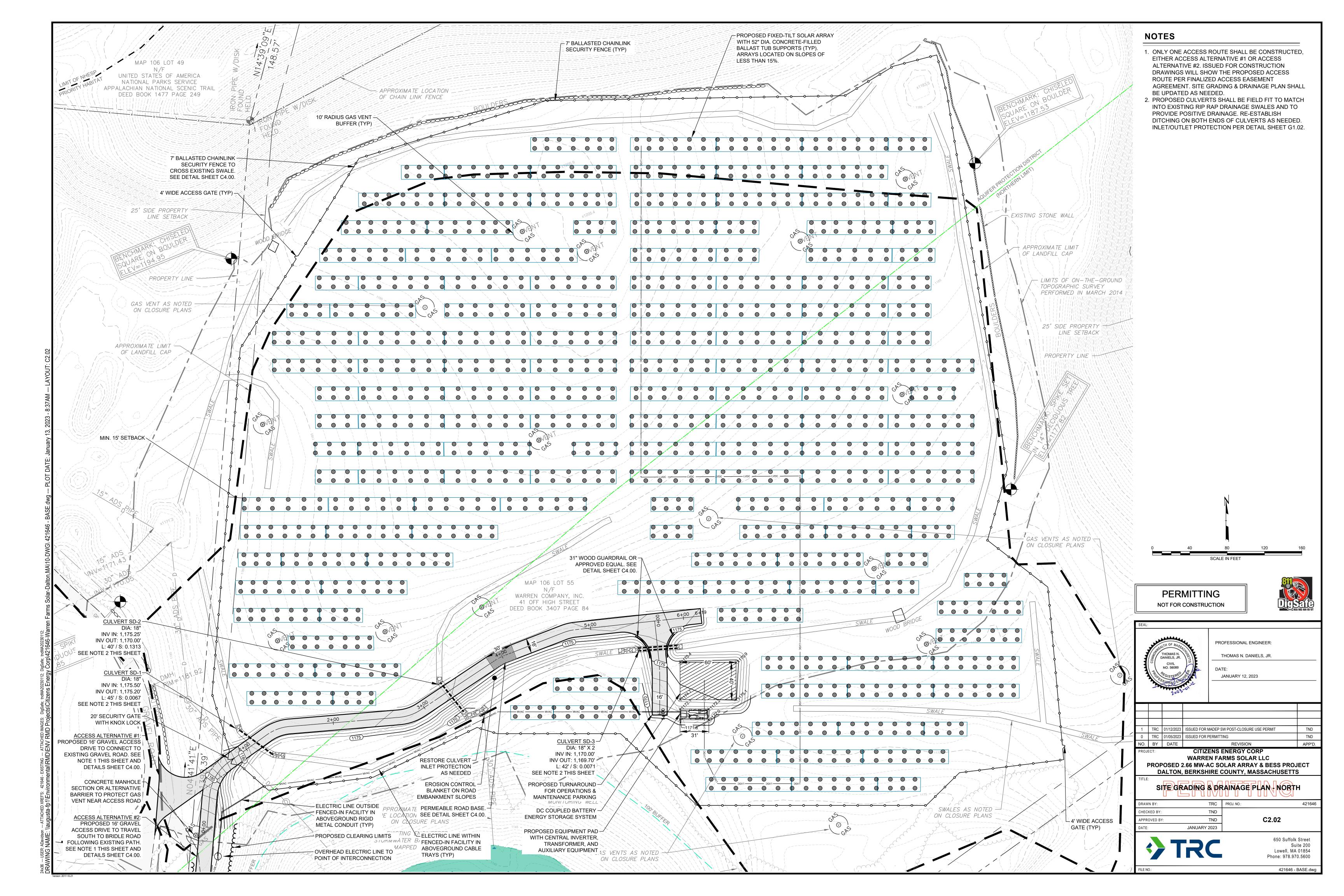


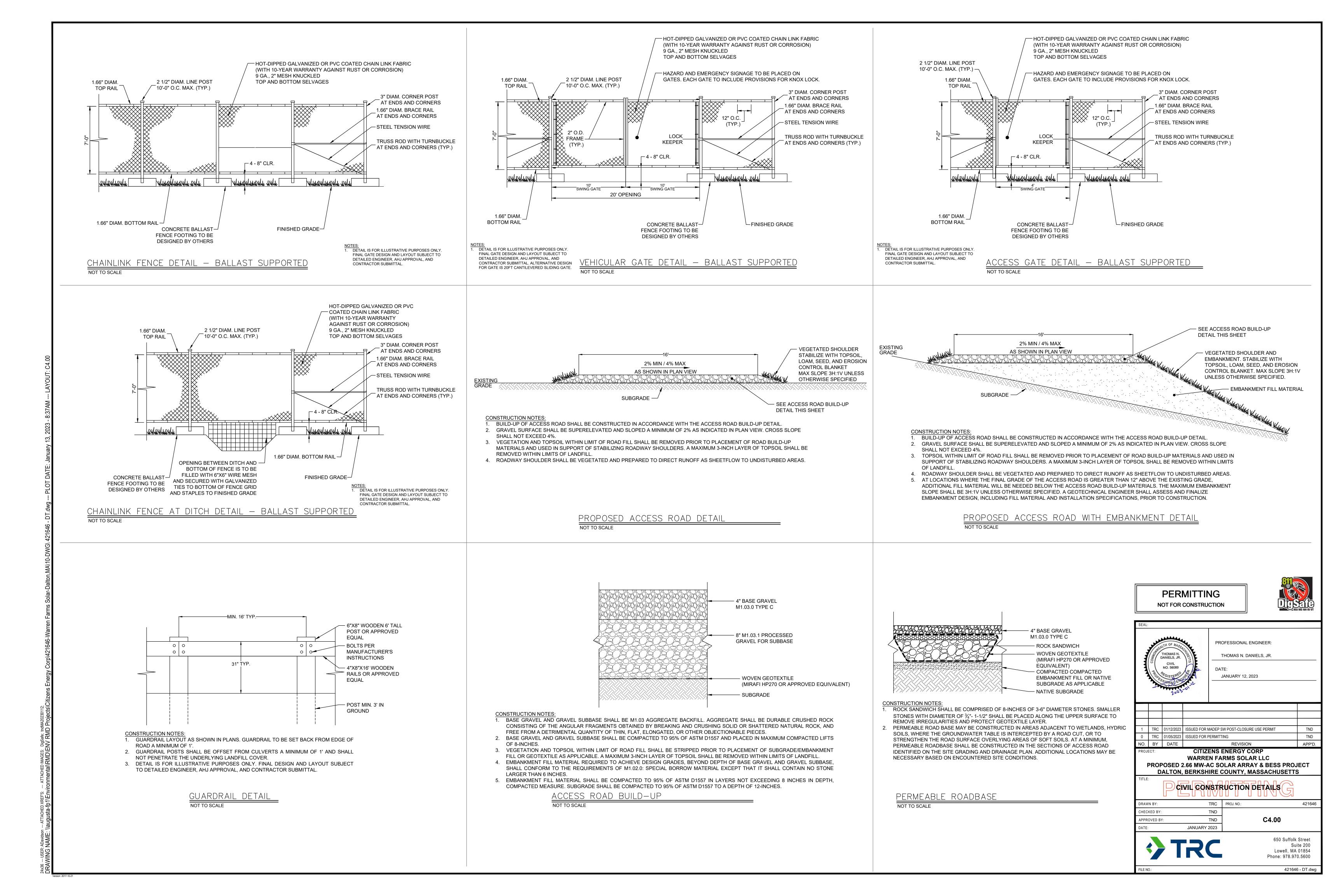


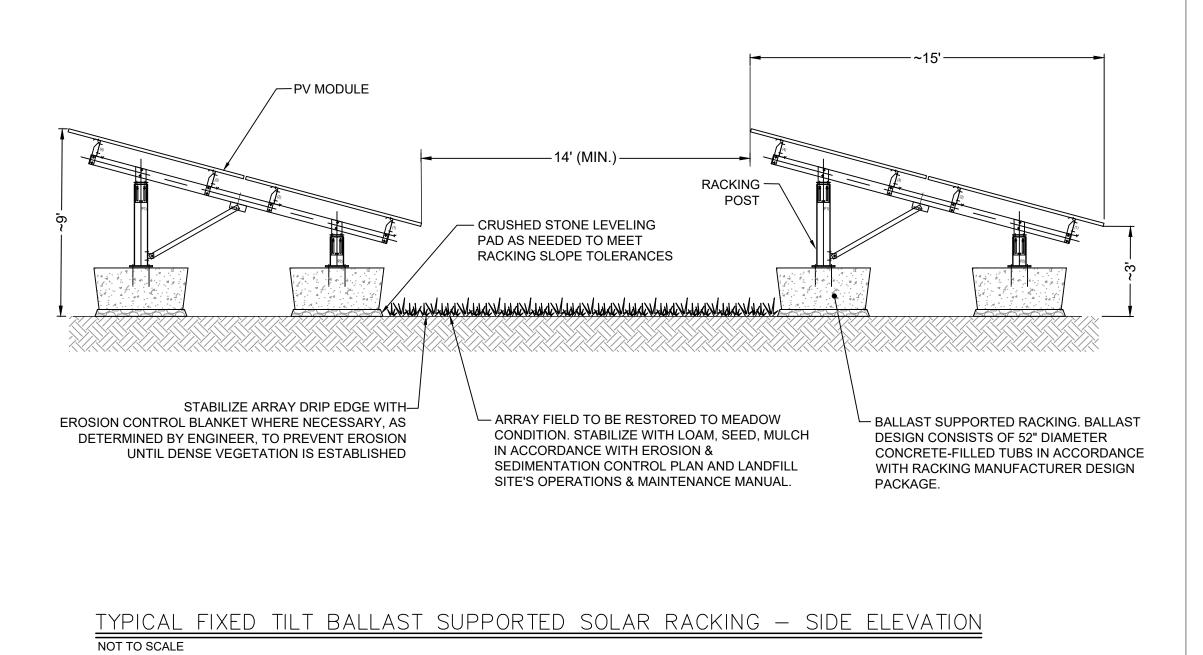




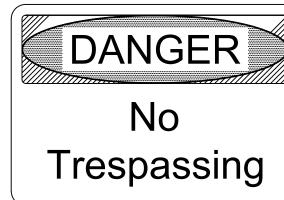


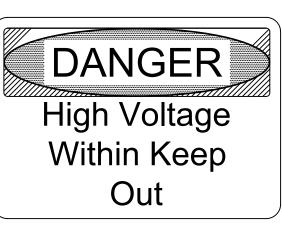








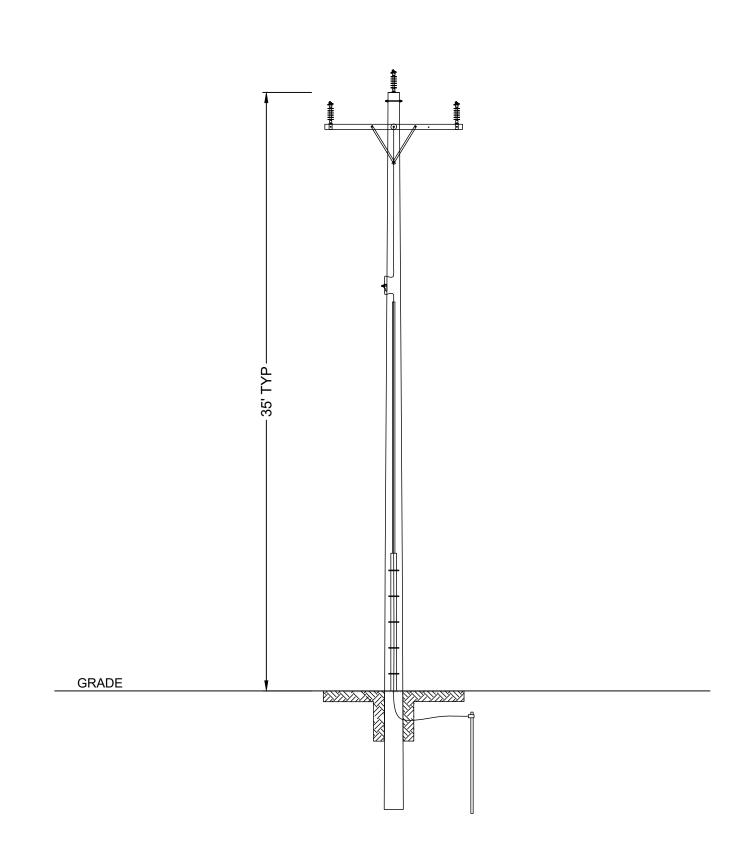




- SIGNS SHALL BE PLACED ON GATES AND ALONG PERIMETER FENCING.
- SIGNS SHALL CONFORM TO THE 2013 OSHA AND ANSI REQUIREMENTS.
- SIGNS SHALL BE 20" WIDE BY 14" HIGH.
- SIGNS SHALL HAVE A MOUNTING HEIGHT OF BETWEEN 45 TO 66 INCHES.
- SIGN PANELS SHALL BE 10 GAUGE ALUMINUM WITH HIGH VISIBILITY REFLECTIVE SHEETING.
- 6. SIGNAGE SHALL INCLUDE 24-HR EMERGENCY CONTACT INFORMATION FOR FACILITY OPERATOR.

HAZARD & EMERGENCY SIGNAGE

NOT TO SCALE



TYPICAL UTILITY POLE NOT TO SCALE

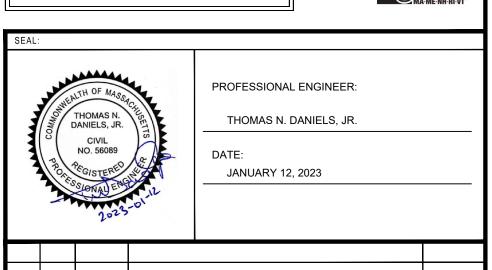


PERMITTING

NOT FOR CONSTRUCTION



421646



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0 TRC 01/05/2023 ISSUED FOR PERMITTING NO. BY DATE APP'D. CITIZENS ENERGY CORP WARREN FARMS SOLAR LLC

PROPOSED 2.66 MW-AC SOLAR ARRAY & BESS PROJECT DALTON, BERKSHIRE COUNTY, MASSACHUSETTS

TRC PROJ. NO.:

PRELIMINARY ELECTRICAL DETAILS

C5.00

650 Suffolk Street Suite 200 Lowell, MA 01854

Phone: 978.970.5600 421646 - DT.dwg

- EQUIPMENT PAD AND ELECTRICAL EQUIPMENT PER ELECTRICAL DESIGN - ADD 30-MIL GEOMEMBRANE BELOW 0.5% MIN **EQUIPMENT PADS TO PREVENT** LANDFILL GAS INTRUSION AS SHOWN IN PLAN VIEW **EXISTING** GRADE VEGETATED SHOULDER AND EMBANKMENT. STABILIZE WITH TOPSOIL, LOAM, SEED, AND EROSION CONTROL BLANKET. MIN. 2% POSITIVE DRAINAGE AWAY FROM EQUIPMENT PAD AND MAX SLOPE. SUBGRADE -— EMBANKMENT FILL MATERIAL EQUIPMENT PAD SURFACE SHALL BE GRADED WITH MINIMUM 0.5% SLOPE WITH SURROUNDING GRADES A MINIMUM 2% SLOPE TO PROVIDE ADEQUATE SURFACE WATER DRAINAGE AWAY FROM EQUIPMENT PAD. 2. TOPSOIL WITHIN LIMIT OF EQUIPMENT PAD FILL SHALL BE REMOVED PRIOR TO PLACEMENT OF FILL MATERIAL AND USED IN SUPPORT OF STABILIZING SHOULDERS/EMBANKMENTS. A MAXIMUM 3-INCH LAYER OF TOPSOIL SHALL BE REMOVED WITHIN LIMITS OF LANDFILL (FOR EQUIPMENT PAD EMBANKMENT CONSTRUCTION AND WHERE ELECTRICAL EQUIPMENT GROUNDING WILL OCCUR). OTHERWISE, THERE WILL BE NO EXCAVATION OF LANDFILL COVER MATERIAL FOR ELECTRICAL EQUIPMENT INSTALLATION. SHOULDER SHALL BE VEGETATED AND PREPARED TO DIRECT RUNOFF AS SHEETFLOW TO UNDISTURBED AREAS. 4. FOUNDATION DESIGN AND SUBGRADE BELOW CONCRETE PAD PER ELECTRICAL DESIGN TO BE FINALIZED PRIOR TO CONSTRUCTION. TYPICAL EQUIPMENT PAD DETAIL

NOT TO SCALE

**NOTES** 

